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# Physical Education Teacher Candidates' Beliefs About Instructing Students With Disabilities in Adapted Aquatics

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The purpose of this study was to describe and explain teacher candidates' beliefs about instructing students with severe disabilities in adapted aquatics as a requirement of their physical education teacher education (PETE) program. The participants were 10 PETE teacher candidates (6 male and 4 female) enrolled in adapted physical education courses coupled with an adapted aquatic practicum. This explanatory case study was situated in the theory of planned behavior. The data sources were face-to-face interviews, self-reflective journaling entries, and follow-up e-mail messages. Data were analyzed using constant comparative analysis, and we uncovered the following themes: (a) *expectations unmet*, (b) *limited choice*, and (c) *experiential learning*. Based on the findings, it is clear at least a minimal amount of course work in adapted physical activity (including adapted aquatic instruction) and in special education and hands-on experiences working with students with disabilities should be recommended, if not required, in PETE programs.

**Keywords:** adapted aquatics, physical education teacher education, trainee experience

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Physical education teacher education (PETE) programs are charged with preparing teachers who can implement effective pedagogies (Hodge & Faison-Hodge, 2010). To that end, PETE programs typically offer field-based teaching experiences in the professional preparation and occupational socialization of PETE teacher candidates (Metzler & Tjeerdsma, 2000; McCullick, 2001; Stroot & Whipple, 2003). Sleeter (2008) encouraged PETE programs to include the following components in trainee experiences: (a) preparation for the daily realities and complexities of schools and classrooms, (b) content knowledge and theoretical knowledge that universities can provide, and (c) dialogue with the communities in which schools are situated. PETE teacher candidates' professional preparation should also include apprenticeships in diverse environments such as schools in urban communities (Burden, Hodge, O'Bryant, & Harrison, 2004). Such apprentice opportunities in teacher preparation can help minimize teacher candidates' stereotypical beliefs about various demographic populations and challenge the deficit model (Sleeter, 2008). Arguably, teacher candidates should also acquire skill and knowledge in adapted aquatics for teaching students with disabilities (Sato & Hodge, 2012).

It is well-established that learning how to swim for individuals with or without disabilities can increase water safety; may enhance physiological fitness; can promote social, emotional, and psychological wellness; should provide a sense of accomplishment and gratification; and offers increased opportunities for social interaction (Berukoff & Hill, 2010; Norris, 2012; Stan, 2012; Summers & Wallace, 2013; Weiss, McCullagh, Smith, & Berlant, 1998). Aquatic activities can provide a form of exercise that is "fun and relaxing and helps promote social acceptance" (Conatser, 2008, p. 256). Further, a person's flexibility and range of motion (ROM) can be maintained or improved through participating in different aquatic-based activities such as aqua therapy, synchronized swimming, and aquatic exercises (Lepore, Gayle, & Stevens, 1998; Yaggie & Armstrong, 2002). Increased mobility with greater flexibility and ROM can be essential for students with disabilities, particularly those with physical disabilities (Lepore et al., 1998; Yaggie & Armstrong, 2002).

For years researchers have studied the effects of various educational strategies (e.g., specialized course work and practicums) on the attitudes or beliefs of PETE teacher candidates about teaching students with disabilities (Apache & Rizzo, 2005; Martin & Kudláček, 2010; Rizzo & Vispoel, 1992). It has long been established that adapted physical education (APE) courses coupled with practicum experiences can influence the beliefs and teaching competencies of kinesiology majors including PETE teacher candidates (Hodge & Jansma, 1999; Hodge, Davis, Woodard, & Sherrill, 2002; Hodge, Tannehill, & Kluge, 2003; Rizzo & Vispoel, 1992). There is little debate PETE programs have a professional obligation to ensure their trainees have an understanding and skills in teaching students with disabilities in various environments. This responsibility arguably should also include preparing them to teach swimming to students with disabilities (Sato & Hodge, 2012).

In the United States and elsewhere, researchers have focused on exploring aquatic instructors' attitudes and beliefs in teaching individuals with disabilities (Blitvich, Moran, Petrass, McElroy, & Stanley, 2012; Conatser, 2007b, 2008; Conatser, Block, & Gansneder, 2002; Sato & Hodge, 2012). For instance, Conatser (2008) surveyed aquatic instructors from seven countries (New Zealand, Australia, Cayman Islands, Germany, Canada, Mexico, and Argentina) to assess their attitudes

about teaching swimming to youth with mild and severe disabilities in inclusive settings. Statistical analysis revealed the aquatic instructors were significantly more favorable toward teaching aquatics to youth with mild disabilities than those with severe disabilities. Further, although the instructors agreed they should include youth with mild disabilities, they disagreed over including youth with severe disabilities in their aquatic programs. What is more, the instructors did not feel prepared to teach youth with disabilities. These results are consistent with findings from earlier studies conducted with aquatic instructors in the United States (Block & Conatser, 2002; Conatser, 2004, 2007b; Conatser & Block, 2001; Conatser et al., 2002). In contrast to a wealth of studies involving aquatic instructors, the research base is undeveloped in studies of teacher candidates' beliefs about instructing students with severe disabilities in adapted aquatics.

In adapted aquatics, trainees (e.g., teacher candidates) are charged with learning information that provides support in adapting and modifying equipment for students with disabilities and techniques for successful instruction of a class filled with students who have a wide range of abilities (Conatser, 2007a; Conatser et al., 2002; Conatser, Block, & Lepore, 2000). Adapted aquatic apprentice experiences may prove to be beneficial in such cases as aquatic instructors and physical educators (including teacher candidates) have as a core goal helping students with disabilities to make incremental improvements in their levels of physical activity, but also facilitating more opportunities to engage socially with peers (Ortiz-Castillo, 2011).

Much of the aforementioned work is situated in the theory of planned behavior (TpB; Ajzen, 1985, 1991). This theoretical model posits that behavioral intention is a precursor to actual behavior. It is further posited that behavioral, normative, and control beliefs are predictors of an individual's intent to perform a specific act (Ajzen & Fishbein, 2005).

## Purpose and Conceptual Framework

The purpose of this study was to describe and explain PETE teacher candidates' beliefs about instructing students with severe disabilities in adapted aquatics as a course requirement. As mentioned above, this study was situated in TpB (Ajzen, 2002). TpB is a firmly established theoretical framework (Ajzen, 1985, 1991, 2002). It has been used regularly in examining the attitudes (or beliefs) of physical education teachers or teacher candidates in teaching students with disabilities (examples include empirical studies by Jeong & Block, 2011; Kudláček, 2007; Kudláček, Válková, Sherrill, Myers, & French, 2002; Martin & Kudláček, 2010; Sato & Hodge, 2009; Theodorakis et al., 1995). TpB posits that attitudes toward behavior, subjective norms, and perceived behavioral control are the underlying aggregates of behavioral intention (Ajzen, 1991).

Ajzen (1991) articulated the principal tenet in TpB is a person's intention to perform a particular act. Specifically TpB posits the following three conceptually independent determinants of intention. First, *attitude toward the behavior* represents the degree to which a person has a favorable or unfavorable evaluation or appraisal of the act in question (e.g., a teacher candidate has a favorable attitude about providing individualized instruction in teaching beginning aquatic skills to a student with a severe disability). Second, *subjective norm* denotes the perceived

social pressure to perform or not to perform the act (e.g., social pressure from a mentor teacher to include a child with disabilities in water safety activities). Third, *perceived behavioral control* means the perceived ease or difficulty of performing the act (e.g., availability of floatation devices needed for a child with severe disabilities to perform flutter kicks and scissors kicks in chest-deep water).

Foundational to the determinants of intention are the following accessible belief systems: (a) *behavioral beliefs*, which influence attitudes toward the behavior (e.g., beliefs shaped by past experiences teaching a child with a severe intellectual disability); (b) *normative beliefs*, which involve the underlying determinants of subjective norms (e.g., what a teacher thinks his or her colleagues believe he or she should do); and (c) *control beliefs*, which are the basis for perceptions of behavioral control (Ajzen, 1991). Positioned by these accessible belief systems, intention is the immediate antecedent of a particular behavior.

In those cases where an individual believes he or she has adequate control over the behavior, that individual is likely to carry out her or his intention when given an opportunity to do so (e.g., a teacher candidate physically assists a child with severe disability while the child floats in a supine position). In previous studies, TpB's determinants of intention have been used to interpret teachers' or teacher candidates' will and motivation to teach students with disabilities in physical education (Jeong & Block, 2011; Martin & Kudláček, 2010; Theodorakis et al., 1995). Ajzen (1991) contended intentions are "assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior" (p. 181). Motivation is the psychological force that drives our intentions to perform a behavior. It is, in essence, the direction and intensity of behavioral intention. Ajzen (1991) further asserted that the more intense the intent to perform a behavior, the more likely it will be performed. Intent to perform a particular act assumes that the behavior in question is under volitional control (e.g., a PETE teacher candidate has the will, power of choice, professional competencies, support, and resources to work effectively with a student with disability in aquatic activities). This means that perceived behavioral control is a person's *perception* of the ease or difficulty of performing the behavior of interest, which is partially contingent upon resources, past experiences and preparedness, and opportunities available to the person to perform the behavior (Ajzen, 1991).

Implementation of TpB requires thinking logically about intentions, that is, favorable or unfavorable *attitude toward* a particular behavior (e.g., teaching a child who is blind to perform the front crawl stroke), *subjective norm* (perceived social pressure), and *perceived behavioral control* in the ease or difficulty in performing the act (Gutierrez Filho, Ferreira Monteiro, Silva, & Hodge, 2013; Sherrill, 2004). For example, a cooperating teacher might help PETE teacher candidates think critically and proactively (*attitude component*) about how to manage time and resources (*perceived behavioral control component*) in future adapted aquatic settings as well as how, in their role as physical education teachers, they might negotiate with a school administrator (*subjective norm* and *perceived behavioral control components*) about allocating more time and resources to their aquatic programs (Sherrill, 2004). Mindful of the high relevancy of this theoretical model, the research questions that guided this study were as follows:

1. What are PETE teacher candidates' beliefs about assisting and teaching students with severe disabilities in trainee experiences?
2. What are PETE teacher candidates' experiences in assisting and teaching adapted aquatics to students with severe disabilities in trainee experiences?

## Method

The approach was descriptive-qualitative, using an explanatory case study design (Yin, 2003). Exploratory research seeks to investigate an area that has been under-researched. Though there exist studies focused on aquatic instructors' attitudes toward teaching students with disabilities in separate (noninclusive) (Conatser et al., 2000) or inclusive aquatic settings (Conatser et al., 2002), the current study is unique in its focus on PETE teacher candidates' beliefs in assisting and teaching students with severe disabilities in an adapted aquatic setting. Qualitative studies typically focus in depth on small samples, even single cases, sampled purposefully (Patton, 2002). The logic of this case study method is to better understand complex educational and/or social phenomena while retaining the holistic and meaningful particularities of real-life circumstances (Yin, 2003). By that logic, the explanatory case study method is appropriate for exploring PETE teacher candidates' beliefs about instructing students with severe disabilities in an adapted aquatic setting.

## Research Site and Participants

In the PETE program under study, all teacher candidates were required to participate in adapted aquatic trainee experiences at a school for children and adolescents with developmental disabilities (operated by the local county) for at least 30 contact hours. And, at the time of this study, the school had a large number of students (a total of 100, ages 2–21) with severe intellectual, emotional, and physical disabilities. Most of these students had severe physical or intellectual impairments that seriously limited one or more of their functional capacities (e.g., mobility, communication, self-care, self-direction, social skills). School administrators supported the adapted aquatics program. Participants were assigned to assist and teach three to five adapted aquatic classes (between 9:00 a.m. and 2:30 p.m. on Monday through Friday) each week and to conduct one-on-one instruction for 30–35 min per class. Each student with disabilities would participate in the adapted aquatic program at least twice a week. The students had Individualized Educational Plans (IEPs) that articulated goals in a variety of gross motor activities and games in the gym as well as water adjustment, swimming skills, and movement activities in the pool.

The participants were students enrolled in an introductory APE course at a public university in the Midwest region of the United States. They were purposefully sampled using the criterion sampling method. The logic of criterion sampling is to select and investigate all cases that meet some predetermined criterion of importance or interest (Patton, 2002). In this study, all PETE teacher candidates enrolled in the APE course were identified. More specifically, the PETE program under study required all PETE teacher candidates to enroll in an introductory APE course during their seventh semester within the program, which was the semester before student

teaching was to occur. Of the 15 PETE teacher candidates within the course, 10 (6 male and 4 female) voluntarily agreed to participate in this study. Before this, they had not had any experiences of interacting with students with developmental, emotional, or physical disabilities. Each semester, there were physical education, special education, and exercise science majors enrolled in the course, and they all engaged in the adapted aquatic program at the school. The lead researcher received approval to conduct this study from his university's institutional review board and secured signed consent forms from all 10 participants.

**Adapted aquatic instructor.** At the school, the adapted aquatic instructor (Mrs. Harris—pseudonyms are used throughout) assigned each teacher candidate to one or more students with disabilities based on the candidate's gender and interests in a particular disability type (e.g., intellectual, emotional, or physical disabilities). Mrs. Harris held national certification in teaching adapted aquatics from the American Red Cross and had 26 years of experience doing so. She supervised all of the teacher candidates during their apprenticeships. Further, Mrs. Harris evaluated the teacher candidates' instructional competences, behavioral management efficacy, roles in the adapted aquatic program, communication with all those in the setting such as the special education teachers and parents, and their reflective practice. She also provided comments, reflections, and feedback to each participant during the weekly sessions.

## Data Collection

The primary data sources were semistructured face-to-face interviews and participants' weekly self-reflective journal entries (Patton, 2002). In addition, follow-up correspondence using e-mail messaging was used (Meho, 2006).

**Face-to-face open-ended interview.** Two semistructured interviews were conducted with all of the participants individually during the midterm (Week 6) and final (Week 14) evaluations of their adapted aquatic experiences. Using a face-to-face interviewing approach, the lead researcher asked the participants thoughtful questions about the environment, lesson content, teaching strategies, and learning experiences that shaped their beliefs about teaching students with disabilities in adapted aquatics. The face-to-face interviews lasted 60- to 90-min with each participant during midterm and final exam weeks. The questions were carefully worded to ensure relevancy to their environments and experiences.

**Self-reflective journaling.** Scholars have insisted that PETE programs need to enhance future practitioners' knack for reflective practice in action (Hodge et al., 2003; Tsangaridou & O'Sullivan, 1994). Hodge et al. (2003) indicate that reflection through journaling on their learning experiences is beneficial to the preparation of physical education majors who carry out such reflections. Using the relevant pedagogy, PETE teacher candidates must be trained to socialize and work with students with disabilities in adapted aquatics (Hodge et al., 2003). In this current study, we used a self-reflective log developed by Hodge et al. (2003), which was modified and revised to measure teacher candidates' experiences in teaching students with severe disabilities in adapted aquatics. Each participant was asked to engage in self-reflective journaling on a weekly basis.



**Follow-up e-mail interview.** E-mail correspondence was used to supplement journal entries and interview data. E-mail correspondence was used when clarifications, illustrations, explanations, or elaborations were desirable or needed (Meho, 2006). E-mail was useful for checking messages from participants regularly and, if necessary, to summarize the participants' responses to previous questions and return the responses to participants for verification.

**Trustworthiness.** Trustworthiness was established through triangulation, member checking, and peer-debriefing. Triangulation involved the use of multiple data sources including data from interview transcripts, self-reflective journal entries, and e-mail messages. The intent of triangulation is to judge the accuracy of the data as opposed to seeking universal truth (Merriam, 1998). Further member checking was used to reduce the impact of subjective bias (Patton, 2002). The researcher mailed (postal) copies of the interview transcripts and emergent themes to the respective participants. The participants' acknowledgment of the accuracy of the transcripts and the researchers' interpretations of the data ensured trustworthiness was established (Merriam, 1998). Peer debriefing is a process of exposing oneself to a knowledgeable peer in a way paralleling an analytic session, with the purpose of exploring aspects of inquiry that might remain only implicit in the inquirer's mind (Patton, 2002). For this study, two professional colleagues who had expertise in qualitative research agreed to serve as peer debriefers. They deemed the interpretations of the data to be accurate and representative of the participants' statements.

## Data Analysis

A constant comparative method (Boeije, 2010) was used to interpret the data. The basic strategy of this analytical process is to do what its name implies—constantly compare pieces of data. More specifically, each potentially meaningful piece of data within the transcripts from the first set of interviews with each participant and their journal entries was coded independently by the first and second authors, and the differences were discussed until agreement was reached. The second set of interviews and journal entries were initially coded by the lead author and checked by the second author. In addition, two peer debriefers reviewed the codes to avoid potential researcher bias. Further coded data from both sets of transcripts and journal entries, and each participant were compared with identify similarities and differences. The researchers grouped the codes into thematic categories, which were then refined into recurring themes (Boeije, 2010).

## Results

Three interrelated themes emerged from the teacher candidates' narratives. Explainable in the logic of planned behavior theory (Ajzen, 2002), the themes were (a) *expectations unmet*, (b) *limited choice*, and (c) *experiential learning*. The first theme captures the meaning the participants ascribed to difficulties they faced in meeting therapeutic and educational expectations of the cooperating teacher in instructing students with severe disabilities within the adapted aquatic setting. The next theme exposes how the participants limited the choices they made in activities they were willing to involve the students with disabilities in because of their own concerns



about water safety with these particular students. This was due to the severity and types of disabilities the students had. The third theme, which was *experiential learning*, mostly reflects the meaning the participants ascribed to learning from the expertise of the special education teachers, who gave them instructional tips to improve their instruction in the adapted aquatic setting.

## Theme 1: Expectations Unmet

The PETE candidates felt it was difficult to meet the cooperating teacher's (aquatic instructor) expectations in regards to therapeutic and educational goals and objectives in the adapted aquatic setting. The PETE candidates believed their apprentice training in adapted aquatics should be designed to teach aquatic competencies and improve the social development of students with disabilities rather than rehabilitating students' motor skills. They stated that the APE course instructor covered using pedagogical content and knowledge, planning lessons, modifying physical activity and sports, assessing motor and social development, and evaluating students' learning. However, they felt there was a gap in applying the APE course's content to what they learned in the actual aquatic experience. They commented that adapted aquatic is a therapeutic activity. They individually assisted and rehabilitated movement patterns of swimming.

**Therapeutic versus educational demands.** All of the participants believed that adapted aquatic activities should be educationally based in addition to therapeutically based. Observing individuals with disabilities being paired with a student during their rehabilitation process was beneficial for the study participants. However, they believed that students with disabilities also needed to learn social skills from peers within group activities. For example, Ann explained that

I think it would be nice to see that all students with disabilities experience adapted aquatic activities that everyone engages at a swimming pool. Students with disabilities and teacher candidates do their own activity, not interacting with others. I felt that this adapted aquatics focuses on therapeutic and rehabilitation base rather than educational focus. Adapted aquatics can be remedial, but this must be education oriented as well. (Ann interview)

Ann felt that adapted aquatic activities should focus on swimming practice rather than just rehabilitation. Ann suggested that it is important to bear in mind using an established curriculum model could improve trainees' experiences in adapted aquatics. Similarly, Kevin mentioned that physical educators must emphasize cognitive, affective, and psychomotor domains in education. He was concerned students with disabilities rarely communicated with the teachers or with other students with disabilities during the class period:

I think students with disabilities have great benefits of motor development practices in adapted aquatics. I also think they need to develop social skills during the class period. It may be difficult to communicate with other students in water, but I strongly believe that adapted aquatics should focus on three domains of cognitive, affective, and psychomotor in physical education not only remedial purpose. (Kevin interview)

Another participant, Cody, responded that he needed to observe model practices of rehabilitation and educational adapted aquatics in the trainee experiences. He believed that aquatics must be related to different swimming forms such as stroke, backstroke, breast, and butterfly. Adapted aquatic focuses on different types and forms of exercise and activity. Cody believed that the trainee experiences changed his disposition from uncertain to positive but that he could write adapted aquatic lessons only for individuals, not a group. He stressed the need to receive more education about best adapted aquatic practice:

I know that we need to teach four different swimming forms of stroke, backstroke, butterfly, and breast for students with disabilities, but this adapted aquatics must focus on educational purpose. I feel that this trainee experiences are rehabilitation purposes, but not education. I am not sure how we can turn to educational practices in swimming. I will be able to write lessons including goals and objectives at individual levels, but not for the entire class. I am physical education undergraduate student. I do not know anything about adapted aquatics. I do not know. I need to have a workshop of model practices of rehabilitation and education in adapted aquatics. I feel that I change my disposition from neutral to positive . . . but . . . I do not know I am doing a right thing for students with disabilities. (Cody interview)

**Challenges in meeting instructor's expectations.** All teacher candidates struggled to meet the adapted aquatics instructor's expectations during the trainee experiences. First, they all needed to serve as instructors, peers, helpers, and sometimes a parental role while they were in the swimming pool. They had to pay attention and fluidly shift their roles toward meeting the needs of students with disabilities. Second, they all had a hard time applying APE course content (e.g., lesson development, modification of activities, and assessment) to their trainee experiences because they claimed to be mentally and physically exhausted from implementing adapted aquatic water safety practices. One of the participants (Judy) wrote about challenges in balancing the roles of adapted aquatics trainee experience with the delivery of adapted aquatic course content. Judy explained,

I completed 10 hours of trainee experiences in adapted aquatics today. My cooperating teacher encouraged me to increase my volunteer roles such as instructor, mother, and peer, but I am not sure what Kevin [student with autism] wants me to do in the swimming pool. I could find what he liked and disliked in the swimming pool, but I do not think I can guide him to achieve goals and objectives of adapted aquatics. My cooperating teacher told me that I need to be his teacher, friend, and mother sometime. I still do not know how to choose the role.

Judy continued,

My APE course instructor covered important materials of APE. I know I had to demonstrate knowledge and skills I learned from class during the trainee experiences, but I struggled so much. It was like I always sought pieces of puzzle. What I learned that it seems that when I taught students with severe disabilities, students with severe disabilities gave me several pieces of puzzle,

I have to find where to put instead of asking them independently find the spots where to put them on. (Judy journal reflection)

Judy further explained that it was the first time she felt that she was under-prepared to teach, assist, or support her student with autism (Kevin) during the aquatic apprenticeship. Disappointed, she was unable to meet the objectives that of applying and demonstrating content knowledge she had learned in the APE course. In her journal, Sara wrote that she paid too much attention to the water safety of her students with disabilities in adapted aquatic program. This limited her ability to concentrate on the adapted aquatic educational components she wished to apply during her trainee experiences:

I felt that I did not give enough time to practice swimming for my student with cerebral palsy. I did not want her to drown in water, so I had to pay attention and give careful assistance during the class time. My cooperating teacher told me that let her float independently, but I just did not want her to be hazardous condition, I tried not to be panicked during the trainee experiences. I honestly became blank when I was in swimming pool today. My cooperating teacher told me that I adjust various roles of teacher, friend, and mother, but I just could not do today. It was hard to keep watching my student whole time. (Sara journal reflection)

Sara wrote that her cooperating teacher understood all participants struggled to teach students with disabilities in the adapted aquatic program. The cooperating teacher mentioned that teaching students with disabilities was intended to make all participants improve and develop new and relevant pedagogical skills for each student with a disability. However, Sara found that the teaching skills she used in the trainee experience might be useless during later sessions because her students with disabilities demonstrated inconsistent performance. She realized that her teaching competence would not meet her cooperating teacher's expectations. She needed to learn how to use various instructional strategies to meet the cooperating teacher's expectations and become more efficient.

## Theme 2: Limited Choice

Teacher candidates were hesitant to help the students with disabilities become independent swimmers. This was because they had safety concerns associated with the students' limited movement, flexibility, and overall lack of general functionality. They felt their choices of activities were limited and did not meet the expected instructional or learning objectives set forth in the students' IEPs. The teacher candidates also mentioned the students' IEP goals and objectives were mostly rehabilitation oriented rather than educationally oriented, which limited the choice of activities as well.

**Assessment reviews.** Kimi mentioned he was surprised the student with a disability he worked with did not have many aquatic activity choices. He believed that his student needed to learn within each of the three domains of physical education (cognitive, affective, and psychomotor). He was quite shocked after reviewing his student's assessment data (including midterm evaluation) and the student's

accompanying medical conditions. He found that the assessment data made it difficult to choose physical activities because the selection was very limited. He also found that his student's short- and long-term goals and objectives were rehabilitation oriented, so he had a hard time finding appropriate lessons for his student in adapted aquatics. Kimi mentioned,

When I reviewed a copy of assessment data of my student with disability, I was surprised and shocked that there were many limitations and regulations that I need to consider. . . . The selection of activities was limited. It was hard for me to find and teach activities in adapted aquatics. . . . I did not know how to select, teach, and assist activities based following these medical information and assessment information. (Kimi journal reflection)

Kimi also explained that he spent the entire semester seeking and maximizing adapted aquatic activity choices that would meet the needs of his student. He believed that 30 hr of trainee experience was not enough for his academic preparation and professional development. Austin, another teacher candidate, reviewed his student's assessment forms and found that one of the IEP goals and objectives was to maximize sensory and perceptual practices. Therefore, he used a motor development textbook (*Life Span Motor Development* by Haywood & Getchell, 2009) to learn more about sensory and perceptual development and from which he developed sensory activity lesson plans for his student. However, he was uncertain whether his lessons in sensory and perceptual practices of adapted aquatics would be appropriate for his student:

I developed sensory and perceptual lessons for my student with disability, because I found that one of the IEP goals and objectives is that my student would improve sensory and perceptual responses from physical activities. Therefore, I developed lessons, but I was uncertain that my lesson was or was not working for my student, because I kept stimulating to his sensory, but I do not teach swimming techniques or anything. Just only rehabilitation, my students had severe disabilities, so no responses and reactions. I ask myself what is meaningful experience for my student with disability in swimming pool? I know that water stimulate his body, but I do not know this is helping or not. (Austin interview)

**Overprotection.** These participants were concerned with water safety and were overprotective of their assigned students with disabilities. As such, they did not deliver instructions that met the individual needs of students. For example, they struggled concerning whether to help students float independently versus looking out for their safety while the students attempted to perform this task independent of their assistance. The participants could not concentrate on delivering adequate instructions or carrying out the IEP goals and objectives because of their overt concerns for students' safety while in the water. For example, Joe mentioned that he carefully monitored his student during class because he was concerned about the safety of the student after reviewing the student's assessment data, which included motor delays (e.g., limited ROM, balance problems, and limited movements). Joe explained,

I became overprotective not allowing him to become an independent swimmer. I was so afraid that my student with disability may drown when I released my hand. I felt that I needed to let him to become more independent, but I remembered that water safety must be my top priority. I had to be careful. My cooperating teacher told me that I said too much about “be careful” did not let him to swim much. I was upset, but what can I do? You know. . . . (Joe interview)

Joanne commented that she struggled to deliver swimming activities because she was more concerned with the safety of the student. She explained,

I always paid attention to water safety too much. I wrote lesson plans for student with disability and I need to complete, but I just could not let him go with flow. I hated the feeling that I could not teach, because I always said to him “No, no, no, you cannot do that!” It sounds very negative. I understand, I would not like instructor who said such prompts. I hate my feeling. I should enjoy and must feel good about myself, but I am not enjoying. It is my fault. I am sorry. (Joanne journal reflection)

Joanne admitted that she became a negative assistant. It was an emotionally painful trainee experience. She sought some help to overcome her trepidations. Nonetheless, she did not make positive progress through the trainee experience. At the end of her journal reflection, she acknowledged a need to receive more guidance from her cooperating teacher rather than investing in solutions by herself.

### Theme 3: Experiential Learning

The participants all had chances to observe their students' special education classes and learned about the academic backgrounds and social goals and objectives of the IEPs with the students' classroom teachers (special education teachers) outside of the trainee experiences. It seems that observing special education classes helped them to teach and assist the students with disabilities more effectively. When the special education teachers shared instructional and managerial tips, the participants were motivated to apply these useful tips for more appropriate practice. For example, they learned about token economy strategies, physical and verbal prompts, and attributes of their students' personalities from the special education teachers. The teacher candidates all decided to ask their students' classroom teacher (i.e., special education) about helpful strategies for effectively teaching students with severe disabilities in adapted aquatic settings.

**Learning token economy.** A token economy was used as a reinforcer for behavioral modification and corrective responses. For example, Bob asked his student's cooperating teacher to find out the types of toys she liked to play with during the special education class time. He then purchased and brought along her favorite toys to the adapted aquatic sessions. He could see significant positive behavior changes. He felt that collaboration with special education teachers would be valuable and beneficial. Bob wrote as follows in his journal reflection:

I had a chance to step in my student's special education class. It was lunch time and it seemed that she really liked a blueberry muffin. The special

education teacher said, I should get plastic toy of blueberry muffin at a Dollar shop. I did. I purchased and brought my plastic muffin. Before I stepped in a swimming pool, she was looking at the plastic toy of muffin. I jumped in the swimming pool. Every time, she did nice jobs in the lessons, I allowed her to play with the toy for 30 seconds to 1 minute. It was working well. I appreciate the special education teacher that she taught me such valuable experiences. (Bob journal reflection)

Bob appreciated that his student's classroom teacher (special education teacher) shared information about the student's personality, helpful tips, and her favorite academic subjects, foods, animals, color, and activities during recess.

Kevin also mentioned that he used floating devices in his student's favorite colors during the trainee experiences:

I had a chance to talk to special education teachers that my student loved donut, so I found flotation device of shape of donut. My student told me that I want "big donut." He was actively engaging with activities in adapted aquatics. I feel that special education teachers know student's history and background. They know inside and outside of their students. I think that we need to ask their suggestions when we have troubles. I highly recommend to all students to have conversation with special education teachers. (Kevin journal reflection)

Kevin also reviewed the daily diary from his student's classroom teachers. His student was highly motivated and used the device to learn aquatic skills. Kevin believed that a transdisciplinary approach with special education classroom teachers is essential to deliver effective instruction to students with disabilities. Use of token economy strategies improved the participants' and students' positive and appropriate interactions.

**Reviewing swallow test results.** All participants were encouraged to review all students' swallow test results assessed by the special education teachers before they taught students with disabilities in the adapted aquatic program. They were fearful that students with disabilities might accidentally swallow water while they were in the swimming pool. This type of accident might warrant medical attention when students were in the swimming pool. The special education teachers delivered workshops about how to handle water safety issues, such as students with disabilities swallowing and spitting out water. These workshops provided knowledge of water safety. The crisis intervention and emergency procedures delivered by the special education teachers contributed to the participants' understanding and helped them understand watch for signs and signals of distress the students with disabilities might exhibit, as well as how to deliver help effectively. For example, Kimi said before the workshops he was not aware that many students with disabilities have difficulty in swallowing water and that he did not know how to help them remove water from their mouth when this occurred:

I did not know anything about how to handle the situation when students with disabilities swallow water in the swimming pool. I was told by special education teachers that I had to support my students' back, neck, and head while I am in the swimming pool. Their classroom teacher told me type of swallowing problem my student had. I found that my students always used



straw when they drink liquid of water, milk, and juices during meals. The classroom teacher showed me swallowing test results. They told me that my student had esophagus disorder. It was valuable information when I did field experiences. (Kimi interview)

Kimi felt that it was inappropriate that his student should participate in the adapted aquatic sessions. His student and the student's parents were willing to have aquatic experiences at the school. Of course, there were some risks associated with participation that might require medical attention, but the student's doctor permitted the student to participate in adapted aquatics as long as the student's face was above the water the entire time.

## Discussion

The overall picture in this study is the teacher candidates interpreted their adapted aquatic apprenticeships as difficult and challenging. Like aquatic instructors in general (Conatser et al., 2000), the PETE teacher candidates needed specialized aquatic training for working with students with severe disabilities and providing appropriate instruction. Instead, they lacked adequate preparedness in regard to full awareness about working with students with severe disabilities and knowledge and skill in adapted aquatic instruction or rehabilitation therapy. These factors made responding to the needs of the students with disabilities beyond their competence. As a result, the PETE teacher candidates experienced frustration and held strong beliefs about their own incompetence in the aquatic setting.

### PETE Teacher Candidates' Perceived Behavior Control and Attitudes

Perceived behavioral control reflects how easy or difficult an individual judges performing a given behavior of interest to be (Ajzen & Fishbein, 2000; Conatser et al., 2002). For example, it is clear why the teacher candidates we studied had very little, if any, confidence they had control over the aquatic environment. They did not feel satisfactorily prepared in how to teach students with severe disabilities in adapted aquatic settings. This volatility in perceived behavioral control was exacerbated by the inconsistencies between the pedagogical content and strategies emphasized in the APE course (preparing mostly for inclusive settings) and the therapeutic and rehabilitative approaches emphasized in this particular aquatic program. The adapted aquatic program was housed in a segregated (noninclusive) setting and involved students with severe disabilities, requiring very specific skills for which the PETE candidates were not prepared, and very specific therapeutic goals, differing from the pedagogical goals taught in the APE course.

Attitude toward the behavior was exposed by the teacher candidates' descriptions of the adapted aquatic experience as beneficial in some instances and detrimental on other occasions, as well pleasant at times and unpleasant at other times, motivating or disruptive, safe or unsafe, and valuable or worthless due to inconsistencies in regard to working with the students with severe disabilities. For example, despite the major concerns about the inconsistencies between the content taught in the course and the aquatic practice they were confronted with, the teacher

candidates reported some benefits such as experiential learning. Consequently, they held ambivalent or negative to positive attitudes about teaching students with severe disabilities in aquatics. Their experiences in the adapted aquatic setting, particularly in terms of performing multiple roles (e.g., aquatic instructor, brother, friend, or parent) and interacting with students with severe disabilities, were challenging, but enlightening as well. Of importance, each teacher candidate was committed to succeeding at her or his apprenticeship. Some of them were empathetic and accommodating to the students' motor competencies and instructional needs.

The teacher candidates believed for the students with disabilities they must meet both therapeutic and educational goals and objectives set forth in their IEPs. They were unprepared to do so most noticeably with the students with the most profound disabling conditions. Their experiences were more satisfying in teaching students with disabilities who could better engage in the various aquatic activities. The teacher candidates were pleased to observe that some of their students with disabilities met and achieved their IEP goals and objectives in the adapted aquatic setting. They felt fortunate to see their actions were meaningful. Nonetheless, they felt largely unprepared to demonstrate instructional competence in adapted aquatics.

Further, we found the teacher candidates' water safety concerns and overprotective behaviors may have prevented the students with disabilities from being more independent in the adapted aquatic setting. However, they were not comfortable nor were they confident in an unfamiliar setting and, as such, had a hard time realizing the benefit of their experiences (Adams, Bondy, & Kuhel, 2005). According to Wright (1959), overprotective teachers lack objectivity in their relationships with students with disabilities. The teacher candidates engaged in three types of overprotective behaviors: (a) excessive contact—they constantly were clinging to the students with disabilities, (b) prolonged infantile care—they treated and underestimated the students as if the students were infants, and (c) prevention from becoming independent swimmers because they would not permit the students to take any risks (Wright, 1959).

Adding to their concerns about safety, the teacher candidates learned children with severe intellectual disabilities experience a high incidence of dysphagia and reflux of stomach contents into the esophagus (Böhmer, Klinkenberg-Knol, Niezen-de Boer, & Meuwissen, 1997). This might cause children with disabilities to be at a higher risk of aspiration of liquids (including saliva or stomach contents) into their lungs, which could result in lung infections such as pneumonia (Stewart, 2003). The teacher candidates felt that it was important that they become knowledgeable about these issues. The teacher candidates believed they should be trained to recognize the signs of dysphagia, which includes coughing, gagging, or throat clearing (Stewart, 2003). This occurred when their students swallowed water accidentally while participating in the adapted aquatic program. Jones, Youngs, and Frank (2013) suggest that sharing information between students' classroom teachers and teacher candidates will have a significant effect on teacher candidates' ability to access valuable resources. If such relationships are absent or limited, trainees might feel high levels of stress and anxiety and perhaps decrease their level of commitment (Billingsley, Carlson, & Klein, 2004).

The teacher candidates observed the students' behavioral tendencies and patterns in the adapted aquatic setting. For example, they all had chances to instruct students with autism spectrum disorders (ASD) in the adapted aquatic setting.

Several of the teacher candidates read an article by Kuhfuss and Lucas (2010), which indicates drowning is a leading cause of death for children and adults in the autism spectrum. And, children with ASD around age 5 often drown without making a sound (Kuhfuss & Lucas, 2010). The teacher candidates were concerned about water safety regarding the students they worked with in the aquatic setting. In that context, they sought more information on this topic. On the other hand, the teacher candidates believed they must allow the students to perform independent swimming activities during the apprenticeship. In TpB reasoning, by engaging in hands-on apprenticeships, the teacher candidates transformed their uninformed prejudgments into informed attitudes resulting from their rewarding as well as challenging or even troubling experiences. Content and concepts specific to adapted aquatic instruction must be covered and emphasized in APE courses (Sato & Hodge, 2012). Moreover, APE course instructors and cooperating teachers must work collaboratively in preparing the teacher candidates. The use of an adapted aquatic curriculum and assessment model such as the Lone Star Adapted Aquatics (LSAA) Assessment Inventory and Curriculum model (Apache, Hisey, & Blanchard, 2005) is a necessary component as well.

### Teacher Candidates' Subjective Norm

Subjective norms, that is, normative beliefs, are comprised of an individual's perceptions of how significant others feel about a given behavior and how these feelings motivate the individual to comply with these beliefs. For example, the teacher candidates had difficulty meeting the adapted aquatic instructor's (cooperating teacher) expectations. Although motivated to comply with the instructor's authority and expectations, which they ascribed as social pressure was difficult for them to meet or resolve. Moreover they felt their role as an apprentice aquatic instructor conflicted with traditional roles and responsibilities of physical education teachers. What is more, the teacher candidates had serious doubts about their efficacy to provide meaningful learning (psychomotor, affective, and cognitive) experiences for students with severe disabilities in the adapted aquatic setting.

Lastly, teacher candidates' beliefs concerning how they "*fit*" into the school culture are important to executing various responsibilities (teacher, assistant, and team player; Jones et al., 2013). It is particularly important to note the teacher candidates received more time, better care, and support in each adapted aquatic lesson through interacting with the special education teachers (Jones et al., 2013; Kardos, Johnson, Peske, Kauffman, & Liu, 2001). They believed and clearly stated that it was beneficial to develop a positive professional disposition in communicating and interacting with other professionals (Jones et al., 2013). In that vein, they believed their cooperating teacher was influential and served as an important source of knowledge about adapted aquatics. Their interactions with the special education teachers enhanced their self-confidence.

### Study Limitations

This study has at least two limitations. First, the participants were purposefully selected from one public institution in the Midwest region of the United States. Statistically speaking, therefore, the findings are not generalizable to other PETE

programs at other colleges and universities. From a qualitative perspective, however, the reader can consider transferability to PETE programs at colleges or universities elsewhere in those cases where there are similar particularities (Leininger, 1994). Second, the number of participants was small. Qualitative inquiries, including case studies, typically use small samples, and in line with the logic of criterion sampling, the intent is to go in depth to uncover narratives or themes common to the participants (Patton, 2002). Our intent in using this sampling approach was to expose themes reflective of PETE teacher candidates and their adapted aquatic trainee experiences.

## Recommendations

The primary recommendation from this study is to require teacher candidates to complete a series of trainee experiences to help them, when necessary, overcome challenges in teaching students with disabilities in adapted aquatic settings; to increase their therapeutic and adapted aquatic competences; and to collaborate with cooperating teachers and special education teachers to meet students' needs in adapted aquatic programs. Essential to the preceding recommendation is the need for APE course instructors to use an adapted aquatic curriculum model. The LSAA Assessment Inventory and Curriculum is such a model (Apache et al., 2005). It emphasizes developmental appropriateness and sequential motor development concepts in adapted aquatics (Apache et al., 2005). The following additional recommendations are intended to enhance the quality of adapted aquatic trainee experiences for teacher candidates in PETE programs.

First, all teacher candidates should complete multiple early practicum experiences instructing in adapted aquatic settings and bring special attention to the rehabilitation and educational purposes of adapted aquatics. Chow (2002) identified progressive ways to help students achieve using different instructional approaches (part methods, guided practices, and modified aquatics games). Therapeutic techniques (e.g., students' kinesthetic senses) must be covered within the APE course as well. The teacher candidates acquire proper skills and tactics in adapted aquatic (guided practice) settings. In addition, pedagogical practices help teacher candidates understand how to modify equipment, rules, and routines of activities and games that support students' personal and social development and boost students' self-confidence during adapted aquatic experiences.

Second, coteaching would enhance teacher candidates' knowledge and skill in instructing students with various abilities and disabilities (Grenier, 2011). For example, APE course instructors may emphasize three coteaching variations, which are (a) supportive teaching (the aquatic instructor assists the teacher candidate in her or his pedagogical praxis), (b) parallel teaching (the aquatic instructor and teacher candidate split classes and deliver content to specific students or groups), and (c) team teaching (the aquatic instructor and teacher candidate share roles and responsibilities for designing lessons and plans). Coteaching will likely bring in diverse perspectives about pedagogical practices and student learning that offer insights into the learning needs of students with disabilities (Grenier, 2007).

Third, we recommend, as a PETE program's curriculum requirement, teacher candidates take special education classes, which focus on teaching students with

disabilities (Eichinger, Rizzo, & Sirotnik, 1991). This will help teacher candidates challenge stereotypical beliefs or judgments about people different from themselves (Adams et al., 2005). In addition, course work in special education will provide learning opportunities with respect to performing administrative tasks (e.g., writing IEPs); teaching tasks (teaching content and skills) and modifications (making accommodations, managing behaviors, and consulting with students); as well collaboration with other teachers, parents, and administrators (Wasburn-Moses, 2005).

## Conclusions

Though additional research is needed to confirm or refute our findings, it is clear at least a minimal amount of course work in adapted physical activity (including adapted aquatic instruction) and in special education and hands-on experiences working with children and youth with mild to severe disabilities should be recommended, if not required, in our PETE programs. Moreover, PETE programs should require APE course instructors to use an adapted aquatic curriculum model, such as the curriculum and assessment model by Apache and colleagues (2005), in the preparation of teacher candidates. In addition, to better prepare teacher candidates, we support coteaching (Grenier, 2007) during the teacher candidate's apprenticeship. A final comment, using the logic of the TpB, researchers can determine teacher candidates' beliefs about teaching students with various disabilities in adapted aquatic settings. With this empirical knowledge, educational adjustments can be made to the curriculum offerings in PETE programs.

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